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 (detect or determine)and
 (face or facial or nose or
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Qing Song; Robinson, J.;

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A feature space for face image processing

Qing Song Robinson, J.

Fac. of Eng. & Appl. Sci., Memorial Univ. of Newfoundland, St. John's, Nfld., C

This paper appears in: Pattern Recognition, 2000. Proceedings. 15th Int Conference on

Meeting Date: 09/03/2000 - 09/07/2000

Publication Date: 3-7 Sept 2000

Location: Barcelona Spain

On page(s): 97 - 100 vol.2

Volume: 2

Reference Cited: 7

Number of Pages: 4 vol(xxxi+1134+xxxiii+1072+1152+xxix+881)

Inspec Accession Number: 6887413

Abstract:

We propose criteria for a feature space for **face** image processing and a method for generating such a space. Beginning with many input dimensions, including deformation vectors (obtained through optical flow analysis between an input image and a template) and deformation residues, we apply principal components analysis and **classification** criterion to derive a feature space. We demonstrate **classification** important tasks-**face detection** and expression analysis-in each case using a linear discriminant, thereby demonstrating that the feature space fulfills a rest version of the criteria

Index Terms:

[face recognition](#) [image classification](#) [image sequences](#) [principal component analysis](#) [classification criterion](#) [deformation residues](#) [deformation vectors](#) [expression analysis](#) [detection](#) [face image processing](#) [feature space](#) [linear discriminant](#) [optical flow analysis](#)

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Recognizing facial actions using Gabor wavelets with neutral face average difference

Bazzo, J.J. Lamar, M.V.

Dept. of Electr. Eng., Fed. Univ. of Parana, Curitiba, Brazil

This paper appears in: Automatic Face and Gesture Recognition, 2004. Proceedings. Sixth IEEE International Conference on

Publication Date: 17-19 May 2004

On page(s): 505 - 510

ISSN:

Number of Pages: xvii+904

Inspec Accession Number: 8143031

Abstract:

This work describes a new pre-processing step to classify **facial** expression. Previous works suggest that Gabor wavelets applied to recognize **facial** expression images subtracted from **neutral face** from the same subject could achieve good results under controlled condition as eye and mouth alignment. We propose a recognition system where the Gabor kernels are applied on **facial** expression subtracted from averaged **neutral face**. A fast pre-processing technique that generates a small dimension output data is also proposed. A correct recognition rate of 86.6% is achieved in a 7 upper **face** actions and 81.6% in a 7 lower **face** actions **detection** proposed by a neural network based classifier. The performance is evaluated in a heterogeneous subject database with head motion and lighting variations.

Index Terms:

[emotion recognition](#) [face recognition](#) [neural nets](#) [principal component analysis](#) [wavelet transforms](#) [Gabor wavelets](#) [facial action recognition](#) [facial expression classification](#) [motion](#) [heterogeneous subject database](#) [neural network based classifier](#) [neutral face difference](#)

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